

A NOVEL POTTERY-MANUFACTURING TECHNIQUE IN WESTERN LOEI PROVINCE, THAILAND

by

Donn Bayard*

In the course of an archaeological survey of the areas possibly to be flooded by the construction of the Pha Mông Dam¹, my wife and I encountered several pottery-making villages in western Tha Li District, Loei Province (อ. พัก จ. เลย) in March 1975. As the techniques employed there differ in materials, tools, method, decoration and marketing from the industry previously described by Solheim for Thailand (see Solheim 1964) and Laos (1967) it is worthwhile to describe briefly the techniques as we observed them in one of the Tha Li villages, Ban Na Kraseng (บ้านนากระเซิง).

The village is located some nine kilometres north-northwest of the Tha Li District centre on the right bank of the Hüang (เหือง) River, which at that point forms the boundary between Thailand and Laos. We first encountered the Na Kraseng pottery while surveying monuments in Muong Kène Thao, Khouèng Saignaboury (เมืองแก่นท้าว แขวงไชยบุรี), a short distance down the Lao side of the Hüang from Ban Na Kraseng. There I came across a large vessel fragment fairly distinctive in shape and with a quite distinctive ribbed-surface finish, suggesting manufacture with a carved paddle (see fig. 1a). Since all contemporary village pottery that I have encountered or seen described in the literature from

*University of Otago, Dunedin, New Zealand.

1. The Pha Mông Archaeological Survey Programme was carried out under the auspices of the United Nations Mekong Committee from December 1973 to June 1975; funds were kindly provided by the Ford Foundation. I am grateful for the help of my wife, Daisy Nai Hung Lee Bayard, and in particular the aid and advice of the third member of our survey team in 1974, Mr. Kham-porn Phithaksin, from Ban Na Di, Khon Kaen (นายคำปอนต์ พิทักษ์ศิลป์ บ้านนาดี จ. ขอนแก่น).

northeast Thailand and Laos is plain-finished and made with a plain paddle, I asked where this specimen had been made, and was directed to Ban Na Kraseng, which we visited that same day (3 March 1975). By good fortune, when we arrived several women had materials prepared for the following day's work, and Mrs. Daeng Chamnanthai (นางแดง ชำนาญไทย) was kind enough to explain and demonstrate to us the methods involved.

The clay material contained no artificially added temper whatsoever, in sharp contrast to the sand temper described by Solheim for Louang Phrabang (1967:81), or the carefully prepared clay-and-rice-chaff temper (*chua*, เขียว) described for Ban Nong Sua Kin Ma, Udorn Thani Province (บ้านหนองเสือกินม้า จ. อุตรดิตถ์; 1964:156-7), and which I observed being made at Ban Mo, Maha Sarakham Province (บ้านหม้อ จ. มหาสารคาม) in 1968 and 1974. Instead, clay was gathered only from termite mounds; it thus already had sufficient coarse, sandy inclusions to prevent cracking during drying. Water was added to soften the clay overnight; the following day it would be pounded with additional water in a wooden tray using a long, wooden pestle (fig. 1b). Once the clay had reached a uniform texture and proper consistency, it was rolled by hand into a solid cylinder some 40 centimetres (cm) long by 10 cm thick (fig. 2a). The ends of the clay roll were joined in a ring, which was subsequently flattened by pulling up on each half (first the upper and then the lower) to produce a short, thick-walled, hollow cylinder with concave sides (fig. 2b); this preliminary shaping took about four minutes.

Our informant next demonstrated the first steps in the preparation of a large water vessel (*mo nam*, หม้อน้ำ). The prepared cylinder was placed on a woven bamboo tray some 35 cm square, set on top of one or two old pots about 50 to 60 cm above the ground. The walls of the cylinder were further drawn out with the fingers, followed by some use of the paddle (fig. 3a). The upper edge of the cylinder, which would form

the rim, was beaten with a smooth length of bamboo moistened in water. Once the rim was flat on top, the wall of the rim was thinned using paddle and anvil (fig. 3b); the paddle had been carved, and the anvil was simply a carefully selected river pebble (fig. 5a). When the rim had been completely shaped, the inside was smoothed with the bamboo stick (fig. 4a). The shoulder of the pot was then expanded outward below the rim area with paddle and anvil (fig. 4b); the paddle was moistened frequently to prevent sticking. That stage of manufacture took about four minutes as well, after which the pot was put aside to dry for about an hour. In the last stage, the body of the vessel was further expanded, and the bottom beaten closed. While we did not have the chance to observe that stage, I would assume from the informant's statements that the technique parallels that already described by Solheim (1964: 159; 1967: 83). The finished vessel was then placed with others to dry for at least two or three days before firing; 10 to 15 vessels were being made per day.

We had no opportunity to observe firing, but from what we were told this is done in a slightly different way from that which I had previously observed in Maha Sarakham, and which Solheim reports from Udōn and Louang Phrabang. As in those last two places, potters in Ban Na Kraseng do not use the specially made clay supports I encountered in Maha Sarakham to support the base framework of logs on which the pots are fired. However, as in Maha Sarakham, the logs are placed on a bed of rice straw rather than on the bare ground. As elsewhere, the basic firing fuel is straw, which is heaped over the pile of vessels on the log platform; unlike the other localities, bamboo is used for fuel as well. Once the fire is lit, additional straw and bamboo are added as needed over a space of two to three hours, or until the vessels are glowing hot (cf. 1 to 1.5 hours at Louang Phrabang, three to five hours at Ban Nōng Sūa Kin Ma, and only 15 minutes to one hour at Ban Mō). The fired vessels are left in the pile to cool overnight. From 60 to 100 vessels are fired at one time; breakage and underfiring amount to less than 10 per

cent of the total. The pots are a uniform, fully oxidized brick-red in colour after firing, and show little or no fire clouding; this again contrasts with the production at the Udōn and Maha Sarakham villages, which commonly results in fire-clouded surfaces.

The tools used in manufacture are fairly distinctive. The nested pots and bamboo tray replace the wooden post used for forming the rim in Ban Mọ and Ban Nọng Súa Kin Ma, and the slow wheel used at Louang Phrabang. All of the paddles I saw at Ban Na Kraseng were carved, with deep incisions running parallel to the axis of the paddle (fig. 5a); more intricate designs are not used because they involve "too much work" in carving. The main advantage to the carving is said to be that it helps in shifting the wet clay while forming the pot. As mentioned already, a smooth, round river pebble with lenticular cross-section replaces the mushroom-shaped clay anvils (*hin du*, หินตุ) used at the other Thai villages, but parallels the use of pebbles at Louang Phrabang (Solheim 1967: 82). Five principal vessel types are made; the most popular are water jars (*mọ nam*, หม้อน้ำ) in large and small sizes. Steamers (*mọ nüng*, หม้อนึ่ง), shallow cooking pots (*mọ kaeng*, หม้อแกง), and wide, shallow cups (*thuai*, ถ้วย) are also made (fig. 5b).

One of the more interesting features of pottery manufacture at Ban Na Kraseng is its economic setting. In sharp contrast to the situation Solheim describes at Ban Nọng Súa Kin Ma and at Ban Mọ, the villagers of Ban Na Kraseng are full-time farmers. As far as I could ascertain, the sale of pots serves as only a supplement to their income. Pots are made at only one time of the year, during the third and fourth lunar months (roughly February and March), following the rice harvest. The men of the village do not carry the pots to market, as is the case at Ban Nọng Súa Kin Ma and Ban Mọ; rather, customers (presumably including middlemen, since we observed pots being sold in Loei town) come to the village to buy.

The pots have a considerable reputation throughout the area as effective water-storage vessels which keep water quite cool. The reputation is conceivably justified; comparing the Loei product with the smooth-finished vessels more common over most of the Khorat Plateau, the ribbed finish produced by the carved paddle would have an effect similar to cord-marking, greatly increasing the surface area and thus the degree of slow evaporation through the relatively porous, sandy fabric. Similarly, the ribbed surface should allow for a greater absorption of heat and thus more efficient cooking.

Pots similar to those from Ban Na Kraseng are made in at least two other villages somewhat farther up the Hūang River: Ban Muong Mo (บ้านเมืองหม้อ) on the Lao side and Ban A Hi (บ้านฮี้) on the Thai side. As is to be expected, potting is strictly a woman's activity, passed on from mother to daughter. My informant believed that the villages in question had been making pottery for about 200 years. The pots appear to be traded and used rather sporadically over most of the northern half of Loei Province, although that is only our casual observation.

The Na Kraseng pottery technique thus stands in rather sharp contrast to the potting villages typical of the Khorat Plateau in at least two respects. The first is a quite different approach to manufacture, in the use of a carved paddle rather than a plain one, and in the gathering of "naturally tempered" sandy clay from termite mounds rather than adding either sand or the carefully made clay-and-chaff temper used by most Khorat Plateau potters. It is interesting to note that a study which attempted to determine the feasibility of using clay from termite mounds by prehistoric Australian Aborigines arrived at the conclusion that such material was by and large quite unsuitable for pottery manufacture (Key 1969). However, although the fabric of the Na Kraseng pots is somewhat more friable and easily broken than the vessels of the Khorat Plateau potters which Solheim and I have observed, the pots are obviously serviceable and quite popular.

The second point of contrast is economic. In all of the Khorat Plateau potting villages I have encountered or heard of, villagers spend at least as much time in potting as in farming, relying on cash from the sale of pots to purchase a significant amount of their food. That observation is supported by Keyes' brief description of another Ban Mo potting village in Maha Sarakham (1966: 236, 284 fn. 4). In addition, most if not all of those villages are inhabited by speakers of Thai-Khorat, a dialect mutually intelligible with Bangkok Thai rather than Lao. They would thus appear to be relatively recent migrants from the southern portion of the Plateau (cf. Solheim 1964: 156; Keyes 1966: 236). On the other hand, potting is simply a part-time, seasonal occupation by the full-time farmers of Ban Na Kraseng and nearby villages; moreover, those people speak the same Louang Phrabang dialect of Lao as their neighbours, and have obviously been in the area for a considerable time.

The question arises of the possible archaeological affiliations of Na Kraseng pottery. Until 1974, nothing was known of the prehistory of the Loei area; however, tentative results of the 1973-1975 Pha Mông survey indicate that the prehistory of the area is far more congruent with that of northern Thailand than that of the Khorat Plateau (Bayard, Marsh, and Bayard 1974: 70-75). Pottery-rich sites with sequences spanning thousands of years, such as Non Nok Tha and Ban Chiang (Bayard 1971, Pisit 1973), are notably absent over most of the area surveyed in Loei. Instead, it seems that large, open sites with quantities of pottery appear only with the arrival of iron-using, Buddhist, wet-rice farmers in the area some 400 or 500 years ago. One such site among those tested (the Wa site, Ban U Mung, Chiang Khan District: แหล่งโบราณคดี บ้านอุ่ม อ. เขียงคาน) yielded a significant amount of earthenware with ribbed surfaces formed by rows of parallel incisions or impressions (Bayard, Marsh, and Bayard 1974: 54), roughly similar to the surfaces of Na Kraseng ware. Laboratory analysis of this ware, to be undertaken in the near future, should be able

to determine more exactly its affinities to the Na Kraseng material. It is also worthwhile noting that, while cord-marked earthenware is quite rare in sites in northern and central Loei Province, several sherds have been found on the surface near the Wa site (but none in the excavation itself). Cord-marking is of course common in Khorat Plateau sites to the east, and a paddle carved in parallel lines gives much the same advantages in manufacture as a cord-wrapped one (i.e. easy movement of wet clay while making the pot; affording a more secure grip on the fired vessel when it is wet; increasing the surface area for heat absorption and cooling by evaporation). Thus the Na Kraseng technique could conceivably represent a local adaptation of the late prehistoric and protohistoric sand-tempered, cord-marked tradition present in the Phu Wiang (ภูเวียง) area around Non Nok Tha (Bayard n.d.), and other areas of the Khorat Plateau, before the relatively recent move of Thai-Khorat potters into the area. If so, the adaptation might have consisted in (a) the replacement of cord-wrapping with carving of the paddle; (b) the gathering of naturally tempered clay rather than the addition of sand; and (c) the replacement of manufactured ceramic anvils with smooth river pebbles (easily obtainable in the mountainous streams of Loei, but considerably rarer on the sandy Khorat alluvium). Whether the Na Kraseng pottery is the result of such an adaptation some 200 to 400 years ago cannot be determined without considerably more archaeological research in the Loei area.

REFERENCES

Bayard, Donn

1971 *Non Nok Tha; the 1968 Excavation. Procedure, Stratigraphy, and a Summary of the Evidence.* University of Otago Studies in Prehistoric Anthropology, vol. 4. Dunedin, New Zealand.

n.d. Phu Wiang pottery and the prehistory of northeastern Thailand. *Modern Quaternary Research in Southeast Asia* 3, in press.

Bayard, D.T., T.T. Marsh, and D.N.H.L. Bayard

- 1974 *Pa Mong Archaeological Survey Programme : Preliminary Report on the First Season, December 1973-April 1974*. Department of Anthropology, University of Otago. Dunedin, New Zealand.

Key, C.A.

- 1969 Archaeological pottery in Arnhem Land. *Archaeology and Physical Anthropology in Oceania* 4 : 103-106

Keyes, Charles F.

- 1966 *Peasant and Nation : a Thai-Lao Village in a Thai State*. Ph. D. thesis, Cornell University. University Microfilms, Ann Arbor.

Pisit Charoenwongsa

- 1973 บ้านเชียง. โรงพิมพ์พิชิตเสก กรุงเทพฯ. *Ban Chieng*. Phikhanet Press, Bangkok.

Solheim, Wilhelm G., II

- 1964 Pottery manufacture in Sting Mor and Ban Nong Sua Kin Ma, Thailand. *Journal of the Siam Society* 52 (2) : 151-161.
- 1967 Notes on pottery manufacture near Luang Prabang, Laos. *Journal of the Siam Society* 55 (1) : 81-84.



Figure 1a. Large fragment of Na Kraseng water jar



Figure 1b. Preparation of the clay



Figure 2a. Rolling the clay cylinder



Figure 2b. Formation of the hollow cylinder: first step



Figure 3a. Formation of the hollow cylinder:second step



Figure 3b. Shaping the rim with paddle and anvil



Figure 4a. Smoothing the rim with a bamboo stick



Figure 4b. Expanding the shoulder with paddle and anvil

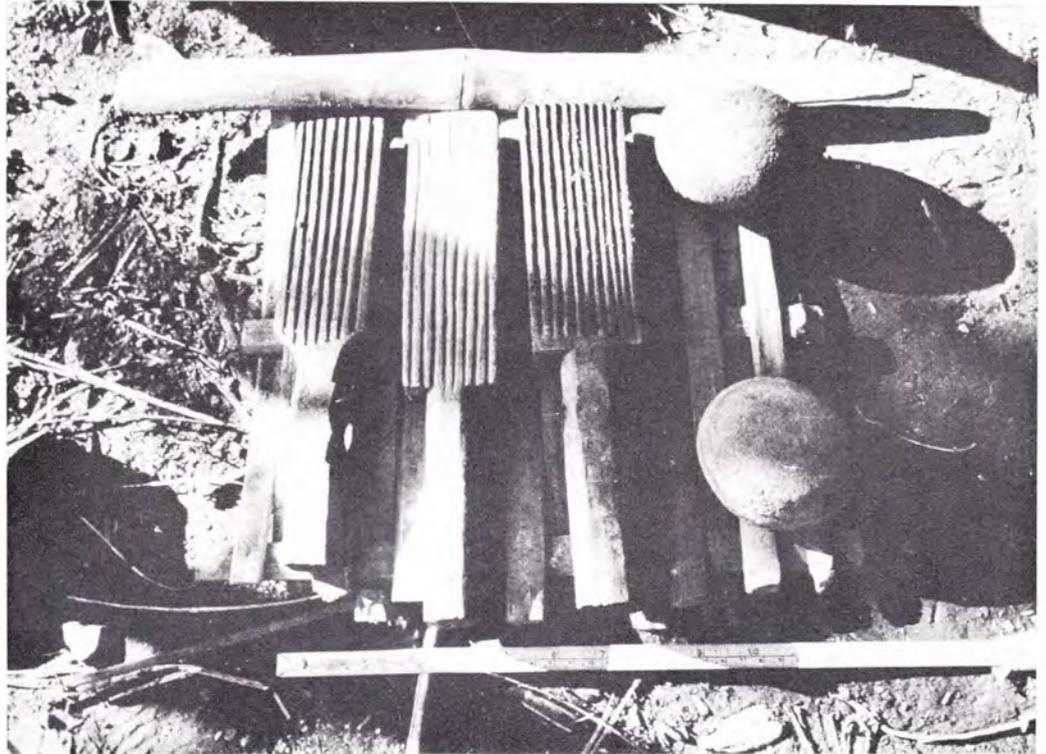


Figure 5a. Tools: bamboo stick, paddles, and anvils



Figure 5b. Vessel types: large water jar, two cooking pots, cup, steamer, and a second water jar